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10/673,453	09/30/2003	Robert D. Horning	H0004181	2002

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Matthew S. Luxton
Honeywell International, Inc.
Law Dept. AB2
101 Columbia Road
Morristown, NJ 07962

EXAMINER	
TAMAI, KARL I	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/673,453
Filing Date: September 30, 2003
Appellant: HORNING, ROBERT D.

Lawrence D. Eisen

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 04/20/2006 appealing from the Office action mailed 11/18/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Patent Number	Inventor	Publication Date
US 2002/0125790	Horning	09/12/2002
US 5180623	Ohnstein	01/19/1993

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim 1-15, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horning et al. (Horning)(US 2002/0125790) and Ohnstein (US 5180623). Horning teaches multiple electrostatic actuators having two polymeric sheets 112 having conductive 111 and dielectric 114 layers, where the sheets are secured together by adhesive 120. Horning teaches on sheet being flat (figure 6) or both sheets bowing (figure 7). Horning teaches multiple actuators laminated to form a stack. Horning does not teach the circular shape, the egress hole or the conductive and dielectric layers being films, or the velocity being constant after pull in. Ohnstein teaches a circular shaped electrostatic actuator (figure 6a, 6b) with the conductive 8 and dielectric 15 layers being stacked to form the actuator with an egress hole 6 to form a valve. Ohnstein teaches the circular closure plate. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construction the actuator of Horning with the dielectric and conductive layers being circular films with an egress hole to form a valve with a mating surfaces between the electrodes.

In regards to claim 23, the Ohnstein and the Appellant both teach circular actuator plates, since the Appellant's force is independent of displacement due to the

circular configuration, then Ohnstein's force is independent of displacement. Likewise in claim 24, since the Appellant's velocity is constant after pull in, then Ohnstein's velocity is constant after pull in.

Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horning et al. (Horning)(US 2002/0125790) and Ohnstein (US 5180623), in further view of Scheurenbrand et al. (Scheurenbrand)(US 6182941). Horning and Ohnstein teach every aspect of the invention except, the egress hole in one sheet or one side. Scheurenbrand teaches an electrostatic valve having electrodes in sheets 3 and having holes in only one side or sheet to control the flow of fluid and to use a capacitance sensor to aid in the control of the actuator. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construction the actuator of Horning and Ohnstien the with fluid egress hole in one side to provide a valve with a capacitor sensors improved control over the actuator, and because rearranging parts of the invention requires only routine skill in the art (see *In re Japikse*, 86 USPQ 70).

(10) Response to Argument

A. Improper 35 USC 103 Rejection of Claims 1-15, 23, and 24

The Appellant's argument, that there is no motivation to combine Horning and Ohnstein, is not persuasive. Ohnstein clearly teaches that the inclusion of a hole in circular flexible electrostatic sheets (see figure 6a) allows the device to be operated as a semiconductor electrostatic valve. Ohnstein teaches linear electrostatic actuators provide effective closure devices against high fluid pressure without excessive operating voltages (col. 1, line 66). Ohnstein teaches that linear electrostatic actuators are useful

for providing microvalves or miniature gas valves, particularly to minimize operating voltages and forces necessary to hold the valve against high pressure (see Abstract). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the linear electrostatic microactuator of Horning with a hole to provide a microvalve with minimal operating voltages and which maintains closure against high operating pressures, as taught by Ohnstein. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, motivation clearly and literally comes from the references as cited above.

Appellant's argument regarding the use of circular polymer cells is not persuasive. Ohnstein teaches the equivalence of the valve being square or circular (see figures 6a and 7a, and col. 6, lines 5-10). The rejection is proper because it is within the ordinary skill in the art to choose between known equivalents. Additionally, Horning suggests that the microactuator is not limited to the shown square shape, but can be changed in shape, sized and arrangement (paragraph 0049). The motivation to combine is literally and clearly provided by the references. The rejection is proper and should be maintained.

B. Improper 35 USC 103 Rejection of Claims 24-26

Appellant's argument that claims 24-26 are allowable because claims 1 is allowable is not persuasive for the reasons cited above.

(11) Related Proceeding Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Karl I.E. Tamai KARL TAMAI PRIMARY EXAMINER

Karl I.E. Tamai

Primary Patent Examiner, AU 2834

Conference Date : 06/27/2006

Conferees :

Karl I.E. Tamai (Primary Patent Examiner, AU 2834)

Darren Schuberg (Supervisory Patent Examiner, AU 2834)

Drew Dunn (Supervisory Patent Examiner, AU 2872)